# Solent University Module Descriptor

## **Module Code: COM415** **Module title: Cyber Security Essentials**

### **Why is this module important?**

Security has become increasingly important in modern IT systems as the demand for Internet connectivity and cloud-based services has increased. Securing IT systems is the concern of everyone employed within an organisation and it is essential that all IT personnel have an awareness of Cyber Security issues and the techniques that hackers use to compromise them.

### **What you will learn on the module**

You will be introduced to the importance of Cyber Security along with the concepts of basic security theory and security assurance. We will address the basic techniques for the application of security concepts, basic legal aspects of security and the role of ethical hackers.

You will be introduced to attack techniques, including the following topics:

* + Foot printing and Reconnaissance,
  + Scanning and Enumeration of Networks,
  + Cyber Security threats vulnerabilities and attacks,
  + Gathering data from networks,
  + Finding Vulnerabilities,

We will investigate the threat landscape along with an exploration of future trends and also basic cyber defence techniques.

### **How you will learn**

A case study will be introduced that will illustrate the relevance of the subject to the needs of business and industry. During preparation sessions you will study background theory and under guidance you will investigate solutions that you will apply in practice when you engage in practical workshops. We will adopt a student-centred approach in which you will realise the implementation of solutions to the case study for yourself by means of directed learning.

### **How much time the module requires**

You will need to attend and engage in 4 hours per week of timetabled practical workshops and tutorials for this module. You will also need to engage in an additional 12 hours each week of directed and independent learning outside of these sessions in order to work towards proficiency in this subject. This will include work on preparing your personal learning record, and researching and preparing for a presentation.

### **How you will be assessed**

#### Tasks which help you to learn and prepares you for summative tasks (Formative):

You should maintain a Personal Learning Record each week and show it to your tutor at regular intervals during the timetabled sessions for feedback in order to maximise your marks when you submit it. This should consist of a commentary on each topic and evidence that you have applied relevant technology to the needs of the case study in theory, based on your research and preparation, and in practice, based on your practical laboratory work. Your tutor will be able to give guidance on your weekly progress based upon this account.

#### **Tasks which count towards your degree (Summative):**

The summative assessment is based on a Personal Learning Record (PLR). Your Personal Learning Record will contain a commentary on each topic and evidence of how you have applied relevant technology to the needs of the case study in theory, based on your research and preparation, and in practice, based on your practical laboratory work.

#### **When assessment does not go to plan** If you have not completed your Personal Learning Record to a standard satisfactorily enough to pass the module you will be expected to conduct preparation and practical work based on the original assessment and to submit a Personal Learning Record completed to at least a satisfactory standard according to the assessment criteria.

### **What you will be able to do after the module**

1. Recall, describe and explain the terminology and basic concepts of cyber security.
2. Describe and explain common attack techniques and sources of threat.
3. Describe and explain future trends in cyber security.
4. Describe and explain why information and cyber security are important to business and to society.
5. Illustrate and explain ways to defend against the main attack techniques.

### **How this relates to the dimensions of Solent’s Real-world curriculum framework**

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| --- | --- | --- |
| Dimensions | How students learn | How students are assessed |
| Students are challenged to think in critical, creative and applied ways | Students research solutions to a case study and implement them practically in a workshop | A personal learning record that discusses their approach to theoretical and practical solutions to a problem |
| Students are inspired to do research through inquiry, curiosity and problem-solving | Students are tasked with investigating each topic and applying theoretical solutions to given problems | Students will provide evidence of research and preparation activities in a personal learning record |
| Students experience an intellectually stimulating curriculum which inspires them to learn for life | Students will engage in workshops that will simulate real life systems | Students will provide evidence of solutions to problems documented in a personal learning record |
| Students reflect and grow inwardly, socially and ethically to be able to confront the challenges of the world | Students will acquire skills in promoting themselves as a practitioner | Students will be required to show evidence of how they have engaged in developing solutions for case studies |
| Students face outward to the community, industry and the global environment | Students will need to have an awareness of the need for engagement with business and industry with every opportunity presented | Students will need to reflect evidence of feedback they have gained from engagement for both formative and summative assessments |
| Students learn from authentic, engaging and programmatic assessment | Students will be exposed to current practices and technology in developing solutions to problems | Students should present their solutions based upon current practice and technology |

### **Summative assessment details**

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| --- | --- | --- |
| AE1 | Weighting: | 100% |
|  | Assessment type: | Personal Learning Record |
|  | Aggregation: | N/A |
|  | Length/duration: | 3000 words plus appendices |
|  | Online submission: | Yes |
|  | Grade marking: | Yes |
|  | Anonymous marking: | No |

### Module Author: Neville Palmer

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| Module Title: Cyber Security Essentials | | | |
| Credit Points: | 20 | Module Code: | COM415 |
| FHEQ Level: | 4 | School/Service | SMAT |
| Module Delivery Model: | CD | Max/Min student numbers | 25 |
| Module Leader: | Neville Palmer | | |
| HECOS code | 100376,100365 | | |

### Module change history:

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| --- | --- | --- | --- |
| Module Approved/Year Implemented/Code | July 2019 | 2020/21 | COM415 |
| Module modified/Year Implemented/Code |  |  |  |
| Add extra rows as required |  |  |  |